




UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,513	05/11/2004	Klaus Frohlich	A91988	3512
30008 7590 05/09/2006 GUDRUN E. HUCKETT DRAUDT LONSSTR. 53 WUPPERTAL, 42289 GERMANY			EXAMINER KENNEDY, JOSHUA T	
			ART UNIT 3679	PAPER NUMBER
DATE MAILED: 05/09/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/709,513	Applicant(s) FROHLICH, KLAUS	
	Examiner Joshua T. Kennedy	Art Unit 3679	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 April 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim 13 has been cancelled.

Claims 1-12 have been examined.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5, and 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holdsworth (US Patent 5,909,980) in view of Michelson (US Patent 6,139,550).

As to Claims 1, 3-5, and 7. Holdsworth discloses a device for connecting bar ends, the device comprising:

a pipe section (112) for receiving bar ends of bars to be connected;
clamping elements (142) each having an outer thread;
wherein the pipe section has threaded bores (137) in which the clamping elements are secured by being screwed in; and
wherein the clamping elements are arranged in a first row having a first longitudinal axis (Fig 10);

However, Holdsworth does not disclose a second row having a second longitudinal axes on the same side of the pipe section relative to a circumference of the pipe section and being approximately parallel to the first row nor the clamping elements of the first row being positioned between two of the clamping elements of the second row in a staggered arrangement at an angle of less than or equal to 60 degrees relative to one another, specifically approximately 30 degrees.

Michelson teaches a plating system that permits a pair of bone screws to be inserted into a bone which are staggered [and]... the shafts of the two bone screws cross over in close proximity to each other and define an included angle between 25 and 90 degrees. Such a crossed configuration... provides an extremely stable engagement... as they are very close together and diagonally crossed" (Col 26, lines 66-67, Col 27, Lines 1-10; Also see Figs 96A-97C). Michelson is evidence of the recognition of those of ordinary skill in the art of providing staggered rows for a secure engagement of a cylindrical object per se. Accordingly, it would have been obvious to one of ordinary skill in the art to provide Holdsworth with the staggered arrangement of crossed screws as taught by Michelson to provide an extremely stable engagement of the screws to the bar by diagonally crossing the screws.

As to Claim 2. Holdsworth discloses the clamping elements (142) having ends facing the bar ends and wherein the ends of the clamping elements act in different directions onto the bar ends (Fig 10).

Art Unit: 3679

As to Claim 8. Holdsworth discloses a transverse element (138), arranged at least approximately at a longitudinal center of the pipe section.

As to Claim 9. Holdsworth discloses that the transverse element projects diametrically through the pipe section and is a clamping pin or a groove pin (Fig 10).

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Holdsworth in view of Michelson as applied to claims 1-5, and 7-9 above, and further in view of Hope (US Patent 4,666,326).

As to Claim 10. Holdsworth in view of Michelson the bar connection as claimed but do not disclose each section of the pipe section that receives a bar end having at least one clamping screw that, relative to the circumference of the pipe section, is positioned essentially opposite the clamping elements of the first and second rows.

Hope teaches a similar bar connection having each section of the pipe section that receives a bar end having at least one clamping screw (Fig 1) that, relative to the circumference of the pipe section, is positioned essentially opposite the clamping elements of the first and second rows because "the pair of screws provides a strong grip and ensures that the sleeve fitting is fixedly located relative to the reinforcing bars." (Col 3, Lines 55-57). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the bar connection of Holdsworth in view of Michelson to have a clamping screw positioned opposite the clamping elements of the first and

Art Unit: 3679

second row as taught by Hope because the pair of screws provides a strong grip and ensures that the sleeve fitting is fixedly located relative to the reinforcing bars.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Holdsworth in view of Michelson as applied to claims 1,2,5, and 7-9 above, and further in view of Ecklesdafer (US Patent 5,154,652).

As to Claim 6. Holdsworth in view of Michelson teach the bar connection as claimed but do not disclose that a longitudinal edge of the threaded bores is positioned at least approximately on a tangent of an inner pipe wall surface of the pipe section.

Ecklesdafer teaches a shaft coupling having a sleeve with a shaft inserted and where two "elongated fasteners tangentially engage... opposing sides of each shaft to prevent longitudinal displacement of the shafts relative to one another" (Col 2, Lines 17-21). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the bar connection of Holdsworth in view of Michelson to have clamping elements that tangentially engage the opposing sides of each shaft as taught by Ecklesdafer to prevent longitudinal displacement of the shafts relative to one another.

Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holdsworth in view of Michelson as applied to claims 1,2,5, and 7-9 above, and further in view of Mochizuki (US Patent 5,974,761).

Art Unit: 3679

As to Claim 11. Holdsworth in view of Michelson disclose the bar connection as claimed but do not disclose each section of the pipe section that receives a bar end having at least one transverse pin that extends at least approximately at a right angle to a longitudinal axis of the pipe section and is arranged in immediate vicinity of an inner pipe wall.

Mochizuki teaches a splice sleeve from reinforcing bars similar to the bar connection as disclosed having a taper pin and corresponding hole adaptable to be used in conjunction with the sleeve of Holdsworth in view of Michelson and Ecklesdafer that is tangential to the reinforcing bar "to fasten the reinforcing bar to the supporting projections" (Col 2, Lines 45-49). It would have been obvious to one of ordinary skill in the art at the time of invention to modify the sleeve of Holdsworth in view of Michelson and Ecklesdafer to have the hole and pin as taught by Mochizuki to fasten the reinforcing bar to the clamping projections.

As to Claim 12. Holdsworth in view of Michelson and Mochizuki disclose the at least one transverse pin is a groove pin or a clamping pin (33,34) and is comprised of hardened material.

Response to Arguments

Applicant's arguments filed 4/27/2006 have been fully considered but they are not persuasive.

As to Claims 1-5 and 7-9, Applicant argues:

"[the Michelson] patent is classified in US Cl. 606 – surgery. The present invention relates to reinforcement bars in concrete construction; U.S. Cl. 403. It is not seen how a person skilled in the art of construction industry would look into the field of surgery for finding a solution to the problem of connecting rebar ends with one another".

Examiner respectfully disagrees as to Claims 1-5 and 7-9. Though the Michelson patent is classified in surgery, it still teaches an apparatus and a solution for providing a diverse, secure connection, and thus is directly applicable to the instant application.

Applicant additionally argues:

"The screws that are used for attachment penetrate deep into the bone material in order to attach the plate to the bone... [Michelson] has nothing to do with clamping a rod material... The rebar ends to be connected should not be penetrated by screws so as not to affect the structural integrity."

Examiner respectfully disagrees. It is the teaching of the arrangement of alternating holes and the application of angled forces via screws providing the secure engagement

Art Unit: 3679

that the Examiner is applying to the Holdsworth reference, not the teaching of the screws penetrating the bar (bone). Even if the screws were to penetrate the rebar, nothing within the instant claim language states that the connection is strictly limited to external clamping forces.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent 4,142,811 to Burnham cited to show a hub for receiving a shaft that is secured by clamping elements being tangent to the shaft.

US Patent 4,666,326 to Hope cited to show a reinforcing bar coupling system having clamping elements on either side of the reinforcing bar to secure it within the sleeve.

US Patent 6,530,716 to Grimm cited to show a connection for shafts having clamping elements on all sides of the shaft to secure it in place.

US Patent 4,035,098 to Griffen cited to show a connection for shafts having 3 clamping elements on the same side of the shaft to secure it in place.

US Patent 3,473,285 to Michelson cited to show a reinforcing bar coupling system having staggered holes on either side of the reinforcing bar to secure it within the sleeve.

Art Unit: 3679

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua T. Kennedy whose telephone number is (571) 272-8297. The examiner can normally be reached on M-F: 7am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (571) 272-7087. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JTK

JTK

5/4/2006



DANIEL P. STODOLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600